

**AMENDMENTS TO THE CLAIMS:**

***This listing of claims will replace all prior versions, and listings, of claims in the application:***

1. (Currently amended) A training method for a power amplifier pre-distorter formed by a FIR filter structure, wherein the FIR filter structure includes an individual look-up table for each filter tap, the method comprising:

selecting, from the each filter tap look-up table, a filter coefficient that depends on an amplitude of a corresponding complex signal value to be multiplied by the filter tap;

determining a first estimate of a first look-up table assigned to a first filter tap, assuming a second look-up table assigned to a second filter tap is set to predetermined table values; and

determining a second estimate of ~~the~~ a second look-up table, assuming the first look-up table is set to the determined first estimate,

wherein each look-up table represents a discretized polynomial in a variable representing the signal amplitude, and

wherein the filter coefficient selected from the look-up table corresponding to each filter tap is independent of complex signal values to be multiplied by other filter taps.

2. (Previously presented) The method of claim 1, further comprising refining the first estimate, assuming the second look-up table is set to a latest determined second estimate.

3. (Previously presented) The method of claim 1, further comprising:  
(a) refining the first estimate, assuming the second look-up table is set to the latest determined second estimate; and  
(b) refining the second estimate, assuming the first look-up table is set to a latest determined first estimate.

4. (Previously presented) The method of claim 3, wherein the steps (a) and (b) are repeated until the first and second estimates have converged.

5. (Previously presented) The method of claim 2, wherein the steps of determining the first estimate, determining the second estimate, and refining the first estimate involve solving equations having a same algebraic form.

6. (Currently amended) A base station including a power amplifier pre-distorter formed by a FIR filter structure including:

an individual look-up table for each filter tap, each of the individual look-up table representing a discretized polynomial in a variable representing signal amplitude; and

means for selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value to be multiplied by the filter tap,

wherein the filter coefficient selected from the look-up table corresponding to each filter tap is independent of complex signal values to be multiplied by other filter taps, and

wherein said base station further includes a pre-distorter trainer including:

means for determining a first estimate of a first look-up table assigned to a first filter tap, assuming a second look-up table assigned to a second filter tap is set to predetermined table values; and

means for determining a second estimate of the second look-up table, assuming the first look-up table is set to the determined first estimate.

7. (Previously presented) The base station of claim 6, wherein said trainer includes means for refining the first estimate, assuming the second look-up table is set to a latest determined second estimate.

8. (Currently amended) The base station of claim 6, wherein said pre-distorter trainer further includes:

means for refining the first estimate, assuming the second look-up table is set to a latest determined second estimate; and

means for refining the second estimate, assuming the first look-up table is set to the latest determined first estimate.

9. (Previously presented) The base station of claim 8, wherein said means for refining the first estimate and said means for refining the second estimate repeat their respective refining until the first and second estimates have converged.

10. (Previously presented) The method of claim 3, wherein the steps of determining the first estimate, determining the second estimate, refining the first estimate, and refining the second estimate involve solving equations having a same algebraic form.

11. (Previously presented) The method of claim 4, wherein the steps of determining the first estimate, determining the second estimate, refining the first estimate, and refining the second estimate involve solving equations having a same algebraic form.

12. (Previously presented) The base station of claim 7, wherein said means for determining the first estimate, said means for determining the second estimate, and said means for refining the first estimate all use solving equations having a same algebraic form.

13. (Previously presented) The base station of claim 8, wherein said means for determining the first estimate, said means for determining the second estimate, said means for refining the first estimate, and said means for refining the second estimate use solving equations having a same algebraic form.

14. (Previously presented) The base station of claim 9, wherein said means for determining the first estimate, said means for determining the second estimate, said means for refining the first estimate, and said means for refining the second estimate use solving equations having a same algebraic form.